

International Journal of Learning, Teaching and Educational Research
 Vol. 25, No. 7, pp. 758-775, July 2026
<https://doi.org/10.26803/ijlter.25.7.34>
 Received May 24, 2026; Revised Jul 6, 2026; Accepted Jul 8, 2026

From Master Teachers to Master Researchers: Examining the Relationship between Research Skills and Productivity

Raquel V. Managad 

Department of Education - Schools Division of Ilocos Norte
 Ilocos Norte, Philippines

Winicel May C. Ancheta 

Mariano Marcos State University
 Ilocos Norte, Philippines

Abstract. Research plays an important role in strengthening evidence-based educational practice. However, limited empirical evidence explains how Master Teachers' research skills are associated with their research productivity. Thus, this study examined the research skills, research productivity, and the relationship between these variables among public elementary school Master Teachers in the three school divisions in Ilocos Norte, Philippines. Guided by Bandura's Social Cognitive Theory, the study employed a descriptive-correlational research design. A total of 280 Master Teachers participated through total enumeration. Data were collected using a validated survey questionnaire and analyzed using weighted mean, frequency count, percentage, and Pearson Product-Moment Correlation Coefficient. The findings revealed that the Master Teachers possess very satisfactory research skills. They demonstrate stronger research skills in the conceptual aspects of the research process, while analyzing data received the lowest rating. Their research productivity concentrates primarily on local journal publications, conference proceedings, and other research outputs. The analysis further revealed a moderate positive and statistically significant relationship between research skills and research productivity. This indicates that Master Teachers with a higher level of research skills generally exhibit higher research productivity. The study concludes that research skills provide an important foundation for research productivity. However, research skills alone do not fully account for variations in research output. The study contributes to educational research by offering empirical evidence on the relationship between research skills and research productivity among Master Teachers.

Citation:
 Managad, R.V. &
 Ancheta, W.M.C.
 (2026). From Master
 Teachers to Master
 Researchers: Examining
 the Relationship
 between Research Skills
 and Productivity
*International Journal of
 Learning, Teaching and
 Educational Research*,
 25(7), 758-775.
<https://doi.org/10.26803/ijlter.25.7.34>

*Corresponding author: Winicel May C. Ancheta; wcancheta@mmsu.edu.ph

Keywords: research skills; research productivity; Master Teachers; descriptive-correlational research; public elementary schools

1. Introduction

Research plays an important role in improving educational quality by providing evidence-based solutions to instructional problems and supporting continuous professional development among teachers. Across educational systems worldwide, teachers are increasingly expected not only to deliver instruction but also to function as knowledge producers who generate and apply findings to improve classroom practices and student learning. Through research, teachers and school learners can identify educational problems, develop appropriate interventions, and promote innovation within schools.

However, despite the growing emphasis on research engagement, instructional studies have consistently reported that many teachers encounter difficulties in doing research. Albalawi and Johnson (2022) revealed that teachers demonstrate limited mastery of the basic components and processes involved in action research. Moreover, educators often experience challenges in data gathering, statistical analysis, and interpretation of findings, thereby limiting their ability to produce meaningful scholarly outputs (Wangdi & Tharchen, 2021). These challenges suggest that the expectation for teachers to become research-oriented practitioners is not always matched by their research skills and opportunities for research engagement.

To address these concerns, many educational systems have adopted policies and mechanisms that promote research culture among educators. In the Philippines, Republic Act No. 9155 or the Governance of Basic Education Act of 2001, recognizes the importance of research by mandating the Department of Education (DepEd) to conduct educational research and studies as bases of policy reforms and program development. Moreover, to strengthen research culture, DepEd institutionalized the Basic Education Research Agenda (BERA) through DepEd Order No. 39, s. 2016 and established the Research Management Guidelines (RMG) through DepEd Order No. 16, s. 2017. These initiatives provide teachers and school leaders with a framework for conducting research and encourage the use of evidence-based practices to address educational issues. Furthermore, research engagement has become one of the criteria for promotion to higher teaching positions, including Master Teacher ranks.

In spite of these measures, several studies have documented persistent challenges in translating research skills into actual research output. Abella et al. (2024) reported that Filipino public-school teachers generally demonstrate satisfactory levels of research skills but exhibit relatively low research productivity. Pentang and Domingo (2024) found that teachers research productivity remains low despite adequate research self-efficacy, mainly due to limited research exposure (Enerio, 2020), time constraints (Hammad & Al-Ani, 2021), lack of institutional support (Quitoras & Abuso, 2021), and publication pressures. Likewise, Amanonce et al. (2025) found that teachers in the Philippines display low research

productivity, particularly in externally funded projects and research utilization, emphasizing the influence of professional and organizational factors.

These issues are particularly relevant to Master Teachers, whose professional responsibilities extend beyond classroom instruction to include instructional leadership, mentoring, and the cultivation of research-based practices. As instructional leaders, they are expected not only to conduct research but also to guide their colleagues in developing evidence-informed interventions and innovations that enhance teaching and learning. In this context, Granado (2024) reported that Master Teachers exhibit satisfactory research capabilities, particularly in technical and methodological aspects, but identified weaknesses in data analysis and research dissemination. Similarly, Repolito and Malonisio (2025) revealed that despite their research capabilities, Master Teachers' overall research productivity remained constrained, highlighting the need for targeted capability enhancement.

However, empirical evidence was presented regarding the relationship between research skills and research productivity among Master Teachers across the three school divisions in the Province of Ilocos Norte, Philippines. While Abara and Antonio (2025) reported that Master Teachers and school heads demonstrate research writing competence but exhibit low levels of research production and publication, their study did not examine the relationship between these two constructs. Thus, the extent to which research skills are associated with research productivity among Master Teachers in the three school divisions in Ilocos Norte remains unexplored.

Addressing this gap, this study examined the relationship between research skills and research productivity among Master Teachers across the three school divisions in Ilocos Norte. By simultaneously examining these two constructs, the study contributes to the growing body of literature on teacher research development and provides empirical evidence that may guide the capacity-building programs, mentoring mechanisms, and institutional support aimed at strengthening research culture and productivity among Master Teachers in Ilocos Norte. The findings are also expected to inform educational leaders and policymakers in developing strategies that foster sustainable research engagement and evidence-based professional practice.

1.1. Theoretical Framework

This study was anchored in Bandura's Social Cognitive Theory (SCT), which explains that human behavior results from the reciprocal interaction of personal factors, behavioral patterns, and environmental influences. Central to this theory is the concept of self-efficacy, defined as an individual's belief in his or her capability to successfully organize and execute actions required to accomplish specific tasks. According to SCT, individuals who possess strong knowledge and skills are more likely to develop higher levels of self-efficacy, which, in turn, enhances their motivation, persistence, and performance. However, the translation of individual capability into actual performance is likewise influenced by environmental conditions that either facilitate or constrain behavior.

Within the context of teacher research, research skills represent the personal capability that enables Master Teachers to identify research problems, design appropriate methodologies, collect and analyze data, interpret findings, and communicate research results (Abella et al., 2024; Tamban & Maningas, 2020). These skills contribute to teachers' confidence in undertaking research tasks, thus strengthening their research self-efficacy. Previous studies have shown that teachers with higher levels of research self-efficacy are more likely to engage in research activities, complete scholarly work, and disseminate research outputs (Pentang & Domingo, 2024). Conversely, inadequate research skills may reduce teachers' confidence in conducting research, resulting in lower levels of research productivity.

In this study, research productivity represents the behavioral outcome of applying research skills through the completion and dissemination of scholarly work. In literature, research productivity is commonly reflected through measurable outputs such as completed research projects, peer-reviewed journal publications, conference papers, books or book chapters, externally funded research, patents, and other recognized scholarly outputs (Khuram et al., 2023).

Guided by the theoretical perspective of SCT, this study examined the relationship between research skills and research productivity among Master Teachers in the three school divisions in Ilocos Norte. Although research self-efficacy was not directly measured in this study, SCT provides a conceptual explanation that research skills may influence productivity by strengthening teachers' confidence to conduct research while interacting with organizational conditions that either facilitate or hinder the translation of capability into research output.

2. Literature Review

The relationship between research skills and research productivity has become increasingly important as teachers are expected not only to consume research but also to generate scholarly outputs that inform educational practice, professional learning, and educational policy. Conceptually, research skills encompass the methodological, analytical, and scholarly competencies required to identify educational problems, formulate research questions, design and implement systematic inquiry, analyze and interpret data, and communicate research findings.

In contrast, research productivity reflects the successful application of these competencies through measurable scholarly outputs, including completed research projects, peer-reviewed journal publications, conference papers, books or book chapters, research grants, patents, and citations (Heng et al., 2020; Khuram et al., 2023). Accordingly, research skills provide the capacity to undertake research, whereas research productivity represents the observable outcome of translating these competencies into scholarly contributions.

Recent international literature increasingly recognizes that this translation is neither automatic nor solely dependent on teachers' methodological competence.

Rather, research productivity emerges from the interaction of individual capability and contextual support. Studies consistently identify research self-efficacy, research experience, and methodological competence as important individual attributes that encourage teachers to undertake and complete research, while institutional factors such as mentoring, collaborative research networks, research funding, workload allocation, leadership support, and organizational research culture determine whether these skills are sustained and translated into scholarly outputs (Heng et al., 2020).

Recent evidence also suggests the importance of information literacy and digital research competencies in enhancing knowledge sharing and research productivity. This suggests that teachers' research capability extends beyond methodological knowledge to include the effective use of digital resources and scholarly communication practices (Sulehri et al., 2024). Also, Pentang and Domingo (2024) found that teachers who are confident in applying their research knowledge and skills are more likely to complete and publish their work. All of these studies suggest that research skills are necessary but insufficient for sustained research productivity unless supported by favorable institutional and professional conditions.

Within the Philippine context, empirical evidence remains fragmented. Recent studies have examined different dimensions of teacher research, including research skills (Abella et al., 2024), research writing competence (Abara & Antonio, 2025), research productivity (Amanonce et al. (2025), and research culture (Sanchez & Abo, 2025). Although these studies have substantially improved the understanding of these areas, they have largely examined these constructs independently or identified contextual determinants of research productivity. Hence, they provide limited empirical evidence regarding whether teachers' research skills themselves are associated with research productivity.

This gap is particularly significant among Master Teachers because they are expected to function as instructional leaders and research mentors. Despite these expectations, little empirical evidence explains whether stronger research skills are associated with greater research productivity among Master Teachers. More specifically, to the best of the researchers' knowledge, no published study has examined this relationship within the three school divisions in Ilocos Norte. Addressing this gap contributes to the literature by providing context-specific evidence on whether research skills significantly predict research productivity among Master Teachers and whether strengthening research skills alone is adequate to improve research output or should be complemented by institutional support, mentoring, and other research initiatives.

3. Methodology

3.1 Research Design

The study employed a descriptive-correlational research design to examine the research skills and research productivity of Master Teachers and determine the relationship between these variables.

The descriptive component was used to determine the research skills and research productivity of Master Teachers. Quantitative data on research skills were gathered using a structured questionnaire that assessed respondents' competencies in selecting a research problem, describing the research context or rationale, selecting an appropriate theoretical framework and research paradigm, writing the review of related literature and studies, formulating the proposed intervention, identifying the research method and sources of data, developing research instruments, analyzing data, interpreting statistical results, reporting findings, drawing conclusions, formulating recommendations, and disseminating research results. Quantitative data on research productivity were obtained by determining the number of research publications produced by the respondents, in terms of journal research articles; conference proceedings or compendium papers; and books, book chapters, book reviews, monographs, and other scholarly publications, such as essays and magazine articles.

The correlational component was employed to determine whether a significant relationship exists between research skills and research productivity among Master Teachers. Specifically, the study examined whether higher levels of research skills are associated with greater research productivity. Since the study sought to describe existing conditions and examine the relationship between variables without manipulating them, a descriptive-correlational research design was deemed the most appropriate.

3.2 Participants

The respondents of this study were public elementary school Master Teachers from the three school divisions in Ilocos Norte. A total enumeration sampling technique was employed. Thus, all Master Teachers in Ilocos Norte were initially identified as the target respondents. Of the 301 Master Teachers, 280 participated and completed the research instrument, yielding a 93% retrieval rate. This high response rate indicated substantial participation and enhanced the representativeness of the findings for the target population.

The respondents had an average age of 49.64 years, with ages ranging from 29 to 63 years. This suggests that the study included Master Teachers from diverse age groups. The majority of the respondents were female (250 or 89.29%), while 30 (10.71%) were male. This reflects the predominance of women in the elementary teaching profession. In terms of educational attainment, most of them (211 or 75.36%) have master's units, followed by 43 (15.36%) who have completed a master's degree. A smaller proportion have doctoral units (7 or 2.50%) or have completed a doctorate, while 12 (4.29%) Master Teachers hold a bachelor's degree as their highest educational attainment. These imply that the respondents generally possess advanced academic preparation. This provides them with the theoretical and methodological foundation necessary to undertake research.

3.3 Data Collection

This study utilized the Survey Questionnaire on Master Teachers' Research Skills and Research Productivity. It consisted of two parts. The first part measured the research skills of Master Teachers. The second part determined their research skills.

The first part, adapted from Tamban and Maningas (2020), assessed the respondents' research skills in 14 areas: 1) selecting the research problem, 2) describing the research context or rationale, 3) selecting appropriate theoretical framework, 4) crafting the conceptual framework and research paradigm, 5) writing the review of related literature and studies, 6) formulating the proposed intervention, 7) identifying the research method and sources of data, 8) developing research instruments, 9) analyzing data, 10) interpreting the results of statistical analysis, 11) reporting findings, 12) drawing conclusions, 13) formulating recommendations, and 14) disseminating research results. Respondents rated their perceived level of research skills using a 5-point Likert scale, where 5 = Outstanding (O), 4 = Very Satisfactory (VS), 3 = Satisfactory (S), 2 = Fair (F), and 1 = Does Not Meet Expectations (DME).

The second part of the questionnaire, adapted from Cardona (2018), measured the respondents' research productivity. Specifically, respondents reported the number of publications they had produced in terms of journal research articles; conference proceedings or compendium papers; and books, book chapters, book reviews, monographs, and other scholarly publications, such as essays and magazine articles. To establish the content validity of the questionnaire, two experts in educational research evaluated the instrument. They assessed the relevance, clarity, and appropriateness of each item using a 4-point rating scale. The instrument obtained an Item-Level Content Validity Index of 1.00 for all items and an overall Scale-Level Content Validity Index of 1.00, indicating excellent content validity. The comments and recommendations of the experts were incorporated to improve the wording and clarity of selected items before the pilot testing.

Before the actual data collection, the questionnaire was pilot-tested among 10 public secondary school Master Teachers. The pilot test was conducted to evaluate the clarity, comprehensibility, and internal consistency of the instrument. Additionally, reliability analysis using Cronbach's alpha yielded a coefficient of 0.858, indicating good internal consistency. The result suggests that the questionnaire is a reliable instrument for measuring the research skills and research productivity of Master Teachers and is suitable for use in this study. To ensure the systematic conduct of the study, the researchers followed an organized data-gathering procedure. A formal request was submitted to the Schools Division Offices of the three school divisions in Ilocos Norte to obtain the official number of public elementary school Master Teachers.

A letter requesting permission to conduct the study was also submitted to the respective Schools Division Superintendents. Upon approval, the researchers coordinated with district supervisors and school heads to facilitate the administration of the survey. Data were collected using an online questionnaire. Before answering, the researchers informed the respondents of the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. Only those who provided their informed consent were allowed to participate in the study. After the data collection, the completed questionnaires

were checked for completeness. The responses were encoded, organized, and analyzed using the appropriate statistical tools.

3.4 Data Analysis

To describe the research skills of Master Teachers, the weighted mean and standard deviation (SD) were computed. The weighted mean was used to determine the average level of research skills for each indicator and for the overall construct. The standard deviation measured the variability of the respondents' ratings. Since the research skills instrument consisted of Likert-type items measuring a single construct, the responses were aggregated into composite scores. Contemporary methodological literature recognizes that composite Likert-type scales may be analyzed using means and standard deviations for descriptive purposes because the aggregation of multiple items approximates interval-level measurement (Alkharusi, 2022).

The computed weighted means were interpreted using the five-point rating scale adopted in the instrument. The descriptive rating intervals were obtained by equally dividing the range of the scale ($5-1=4$) into five categories. This results in a class interval of 0.80.

Table 1 presents the norms used in interpreting the weighted mean scores.

Table 1: Norms used in interpreting the weighted mean scores

Mean range	Descriptive Rating
4.51-5.00	Outstanding (O)
3.51-4.50	Very Satisfactory (VS)
2.51-3.50	Satisfactory (S)
1.51-2.50	Fair (F)
1.00-1.50	Does Not Meet Expectations (DME)

To describe the research productivity of the Master Teachers, frequency counts, percentages, and weighted productivity scores were computed. Frequency counts and percentages were used to summarize the number and proportion of respondents according to the type of research publications produced. Weighted productivity scores were computed by assigning corresponding weights to each type of research publication based on authorship, peer-review status, and level.

The Pearson Product-Moment Correlation Coefficient (Pearson's r) was employed to determine whether a significant relationship exists between research skills and research productivity. The correlation coefficient determined the strength and direction of the relationship between the variables. The corresponding p -value was used to test its statistical significance at the 0.05 level of significance.

4. Results and Findings

The results and findings were organized according to the research objectives. It includes the research skills of the Master Teachers, their research productivity, and the relationship between research skills and research productivity.

4.1 Research Skills of Master Teachers

Table 2 presents the level of research skills of the Master Teachers across the 14 components of the research process.

The results revealed an overall mean of 3.62 ($SD=0.90131$), which corresponds to a descriptive rating of *Very Satisfactory*. This indicates that, in general, the Master Teachers perceived themselves to possess a high level of skill in carrying out the various phases of educational research. The overall standard deviation indicates moderate variation in the respondents' ratings. This suggests that while most Master Teachers perceived themselves to be skilled researchers, their levels of confidence differed across the various research skills.

Table 2: Research skills of the master teachers

Components	Standard deviation (SD)	Weighted Mean	Descriptive Rating
1. Selecting the research problem	0.88952	3.65	VS
2. Describing the context or rationale	0.94747	3.66	VS
3. Selecting appropriate theoretical framework	0.90117	3.59	VS
4. Crafting the conceptual framework and research paradigm	0.94825	3.57	VS
5. Writing the review of related literature and studies	0.97065	3.64	VS
6. Formulating the proposed intervention	0.91887	3.71	VS
7. Identifying research method and sources of data	0.91976	3.65	VS
8. Developing research instruments	0.90794	3.60	VS
9. Analyzing data	0.9415	3.50	S
10. Interpreting results of statistical analysis	0.93273	3.57	VS
11. Reporting findings	0.96443	3.59	VS
12. Drawing conclusions	0.99910	3.64	VS
13. Formulating recommendations	1.01549	3.68	VS
14. Disseminating results	0.89911	3.63	VS
Overall	0.90131	3.62	VS

Among the 14 components, formulating the proposed intervention got the highest mean ($M=3.71$, $SD=0.91887$), followed by formulating recommendations ($M=3.68$, $SD=1.01549$), describing the context or rationale ($M=3.66$, $SD=0.94747$), selecting the research problem ($M=3.65$, $SD=0.88952$), and identifying the research method and sources of data ($M=3.65$, $SD=0.91976$). These results indicate that the respondents are more confident in identifying educational concerns, planning research activities, and developing interventions and recommendations based on research findings.

The respondents also rated themselves *Very Satisfactory* in writing the review of related literature and studies ($M=3.64$, $SD=0.97065$), drawing conclusions ($M=3.64$, $SD=0.99910$), disseminating research results ($M=3.63$, $SD=0.89911$), developing research instruments ($M=3.60$, $SD=0.90794$), selecting appropriate theoretical framework ($M=3.59$, $SD=0.90117$), reporting findings ($M=3.59$, $SD=0.96443$), crafting the conceptual framework and research paradigm ($M=3.57$, $SD=0.94825$), and interpreting the results of statistical analysis ($M=3.57$, $SD=0.93273$). These findings show that the respondents generally perceived themselves to be skilled in performing the essential tasks involved in conducting and reporting research.

Among all the research components, analyzing data received the lowest weighted mean ($M=3.50$, $SD=0.94150$). This is also the only component rated *Satisfactory*. Although this rating indicates that the respondents possess an acceptable level of skill in data analysis, it also suggests that they are less confident in this aspect of research process than in other research skills assessed.

The standard deviations of the individual components ranged from 0.88952 to 1.01549. This indicates moderate variation in the respondents' ratings. The least variation was observed in selecting the research problem. This implies relatively consistent perceptions among the respondents regarding their research skills. In contrast, formulating recommendations exhibited the greatest variation. This denotes that the respondents differed more in their perceived ability to formulate research-based recommendations.

4.2 Research Productivity of Master Teachers

Table 3 presents the research productivity of the Master Teachers based on their research publications, which focused primarily on journal research articles, conference proceedings or compendium abstracts, and books, book chapters, book reviews, monographs, and other scholarly publications.

For journal research articles, 64 (22.86) respondents reported having published in refereed journals. Of these, 31 (11.07) served as principal authors, while 33 (11.79%) were co-authors. In terms of the level of publication, the majority of journal articles were published in local journals (48 or 17.14%), followed by national journals (10 or 3.57%) and international journals (6 or 2.14%). These findings indicate that although the respondents have participated in research publications, most of their journal outputs were disseminated through local publication outlets.

A similar pattern was observed for conference proceedings or compendium abstracts. A total of 44 (15.71%) respondents served as principal authors, while 34 (12.14%) were co-authors. Most conference papers were presented at the local level (61 or 21.79%), compared with 10 (3.57%) at the national level and seven (2.50%) at the international level. This suggests that the respondents were more actively involved in presenting their research within local academic and professional forums than in broader national or international conferences.

Table 3: Research productivity of the master teachers

Indicators			Frequency (n)	Percent (%)
Journal research articles	Authorship	Principal author	31	11.07
		Co-author	33	11.79
	Refereed	Yes	64	22.86
	Level	International	6	2.14
		National	10	3.57
		Local	48	17.14
Conference proceedings/ Compendium abstract	Authorship	Principal author	44	15.71
		Co-author	34	12.14
	Level	International	7	2.50
		National	10	3.57
		Local	61	21.79
Book/Book chapter/Book review monograph and others (e.g., essay, magazine article, etc.)	Authorship	Principal author	33	11.79
		Co-author	28	10.00
		Editor/Translator	0	0.00
		Consultant	0	0.00
	Level	International	0	0.00
		National	8	2.86
		Local	53	18.93

For books, book chapters, book reviews, monographs, and other publications, 33 (11.79%) respondents reported serving as principal authors, while 28 (10.00%) were co-authors. None of them served as editors, translators, or consultants. Most of these research outputs were published at the local level (53 or 18.93%), whereas only eight (2.86%) were published at the national level. No international publications were recorded under this category.

4.3 Relationship between the Research Skills and the Research Productivity of Master Teachers

Table 4 presents the relationship between the research skills and research productivity of the Master Teachers.

The analysis revealed a moderate positive and statistically significant relationship between research skills and research productivity ($r=0.448$, $p=0.000$). The positive correlation indicates that Master Teachers with higher levels of research skills generally tend to exhibit higher research productivity.

Table 4: Relationship between research skills and research productivity of the master teachers

Variables	Pearson's r	p -value
Research skills and research productivity	0.448**	0.000

The correlation is significant at the 0.01 level.

Although the relationship is statistically significant, the correlation coefficient indicates a moderate association. This means that research skills contribute to research productivity, but they do not completely explain variations in scholarly output among the respondents.

5. Discussion

The findings indicate that Master Teachers generally possess very satisfactory research skills, demonstrate research productivity primarily through local research publications, and exhibit a moderate positive relationship between research skills and research productivity. These findings suggest that while Master Teachers have acquired the knowledge and abilities to conduct educational research, translating these research skills into higher levels of research productivity depends on conditions beyond individual capability. The findings underscore the importance of strengthening both the research skills of Master Teachers and the institutional environment that supports research engagement and dissemination.

The generally favorable level of research skills may be explained by the respondents' profile. Most of the Master Teachers have already pursued graduate education. Others had already completed master's or doctoral degrees. Graduate studies expose teachers to research methodology, academic writing, research implementation, and data analysis. Coupled with years of professional experience, these opportunities likely enable the Master Teachers to strengthen their research skills through continuous practice. Their instructional leadership responsibilities also require them to identify learning problems, evaluate classroom practices, recommend interventions, and support evidence-based decision making. These duties naturally reinforce many of the competencies required throughout the research process.

Despite generally favorable findings, analyzing data emerged as the weakest dimension of the Master Teachers' research skills. This has important implications because data analysis determines the credibility of research findings and the quality of research-based decisions. This result is consistent with recent studies showing that teachers generally demonstrate stronger skills in conceptualizing research than in performing statistical analysis and interpreting research findings (Farin et al., 2021; Borreo, 2023). While identifying educational problems and

developing interventions are skills frequently exercised in school settings, analyzing data requires specialized methodological knowledge, familiarity with statistical software, and continuous practice (Albalawi & Johnson, 2022).

In terms of their research productivity, the Master Teachers remain concentrated at the local level. This suggests that while the respondents are actively engaged in conducting research, relatively few studies progress to publication in nationally or internationally recognized journals. The findings imply that Master Teachers can produce research that addresses educational concerns. However, broader dissemination through peer-reviewed and indexed publications remains limited. This may reflect the realities of school-based research, where studies are often designed to address immediate organizational issues within a particular school or division rather than a wider academic audience.

The findings are consistent with those of Pentang and Domingo (2024), who revealed that teachers generally exhibit low research productivity despite engaging in research activities. Their study found that most research publications of the respondents were non-refereed, were not indexed, and were presented primarily in local settings, indicating that research outputs rarely reached wider scholarly audiences. Magnaye (2023) also found that teachers are less productive in terms of research publications. This emphasizes that strengthening the research publication process (Palmiano, 2024) is necessary to increase the dissemination of educational research and maximize its contribution to educational improvement.

The significant positive relationship between research skills and research productivity further highlights the importance of strengthening teachers' skills. The findings indicate that Master Teachers with a higher level of research skills tend to exhibit higher research productivity. This relationship confirms that research skills provide the foundation upon which research publications are produced.

The finding is reinforced by Salvan et al. (2025), who found a significant positive relationship between conceptual research skills and research productivity as well as between their technical research skills and research productivity. Their results suggest that both the conceptual and technical dimensions of research contribute substantially to teachers' research productivity. This supports the present study's finding that stronger research skills are associated with higher research productivity and underscores that strengthening teachers' research skills can increase their capacity to produce and disseminate research.

However, the moderate strength of the relationship indicates that research skills alone do not fully explain research productivity. While research skills increase teachers' capacity to produce research, they do not automatically result in research publications. Other factors such as institutional support, mentoring, workload, research funding, publication opportunities, collaborative research, and organizational research culture (Cadorna et al., 2022; Abella et al., 2024) also influence whether research skills are translated into research productivity. Improving research productivity requires a comprehensive approach that

strengthens both the research skills of Master Teachers and the organizational structures that sustain research productivity.

6. Theoretical and Practical Implications

This study extends the application of Bandura's SCT in teacher research by demonstrating that research skills contribute to research productivity but do not solely determine it. The findings reinforce Bandura's proposition that behavior is shaped by both personal capabilities and contextual influences, thus providing further evidence that Master Teachers' productivity is influenced by more than their research skills alone.

The findings also highlight that research skills and research productivity represent related but distinct dimensions of teachers' professional development. While Master Teachers generally exhibit very satisfactory research skills, these do not necessarily translate into higher research productivity. This underscores the importance of considering both individual skills and the institutional context when examining teachers' research productivity. The findings also emphasize the need to strengthen technical research skills, particularly in analyzing data, as this area may influence the successful completion and dissemination of research.

7. Conclusion

This study concludes that Master Teachers possess the research skills necessary to undertake educational research, although their strengths are more evident in the conceptual aspects of the research process than in technical components, particularly in analyzing data. Their research productivity is demonstrated primarily through research publications at the local level. This indicates active engagement in school-based research, while reflecting the need for broader scholarly dissemination.

This study further establishes that research skills are significantly associated with research productivity, confirming that stronger research skills are linked to higher research productivity. At the same time, the moderate relationship between the two variables indicates that research productivity is influenced not only by individual research skills but also by contextual and institutional factors that support research engagement.

The study contributes to educational research by providing empirical evidence on the relationship between research skills and research productivity among Master Teachers in the public elementary schools of Ilocos Norte. While previous studies have examined these constructs separately, this study demonstrates how research skills are translated into research productivity within the context of instructional leadership. It also highlights data analysis as a specific area for further professional growth. This offers a more nuanced understanding of the research skills that require continued development among Master Teachers.

The findings also contribute to professional practice by reinforcing the role of Master Teachers as instructional leaders who use research to improve teaching and school decision-making. For program development, the study provides

evidence that teacher development initiatives should strengthen both conceptual and technical research skills while supporting research as a core component of teacher professional development and school improvement. The results provide evidence that efforts to increase teachers' research productivity should consider both individual research skills and the institutional conditions that enable research to be conducted, disseminated, and utilized in educational practice.

8. Recommendations

Based on the findings and conclusions of the study, the following recommendations are offered:

1. Master Teachers may continue to strengthen their research skills through sustained engagement in research activities. Particular attention may be given to enhancing competencies in analyzing data, as this emerged as the least developed research skill. Strengthening this area may improve the quality and rigor of research outputs.
2. School heads and Schools Division Offices may provide sustained support for research engagement. This may be done by strengthening mentoring programs, facilitating collaborative research, and creating more opportunities for research dissemination through conferences and publication in reputable journals. These initiatives may help increase the research productivity of Master Teachers beyond the local level.
3. Teacher professional development providers may design capability-building programs that focus not only on research methodology but also on advanced skills, such as statistical analysis, academic writing, manuscript preparation, and publication processes. These areas may better support Master Teachers in translating their research skills into research productivity.
4. DepEd officials and education policymakers may consider strengthening policies and support mechanisms that encourage research productivity among Master Teachers. Providing access to technical assistance, research resources, publication opportunities, and recognition for research accomplishments may further promote a stronger research culture in schools.
5. Other researchers may examine other variables that might influence the research productivity of Master Teachers. These may include self-efficacy, research motivation, organizational support, leadership practices, workload, research funding, and research culture. Similar studies may also be conducted in other educational settings or regions using mixed-methods or longitudinal research designs to provide a more comprehensive understanding of Master Teachers' research engagement.

9. Limitations of the Study

This study employed a cross-sectional descriptive-correlational design, which describes existing conditions and examines relationships among variables at a single point in time. The results indicate associations but do not establish causal relationships.

Research skills were assessed using a self-reported questionnaire, which measured respondents' perceived research skills. As with any self-report measure, responses may have been influenced by social desirability bias, self-enhancement bias, and response inflation. Thus, the reported levels of research skills should be interpreted as perceived competence rather than objectively verified research capability.

Although research productivity was measured using respondents' scholarly output, the study did not include objective performance-based measures of research skills, such as an expert evaluation of completed research, portfolio assessment, or standardized competency assessment.

The study was limited to public elementary school Master Teachers from the three school divisions in Ilocos Norte. Thus, the results are specific to this group and may not be generalizable Master Teachers in secondary schools or those in other regions with different institutional contexts and research cultures.

10. Disclosure of AI Use

During the preparation of this manuscript, the researchers used artificial intelligence (AI) tools to support the writing process. ChatGPT was used to clarify concepts and improve the clarity of selected sections. Additionally, Grammarly was also used to check grammar, improve sentence structure, and enhance the overall readability of the manuscript. All AI-assisted content was carefully reviewed, revised, and verified by the authors.

11. Acknowledgments

The authors wish to acknowledge all individuals and institutions whose guidance, encouragement, and support contributed to the successful completion of this study.

12. References

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